030-051-6355-A

TUNNEL RECONNAISSANCE
Part II

TEC LESSON 030-051-6355-A

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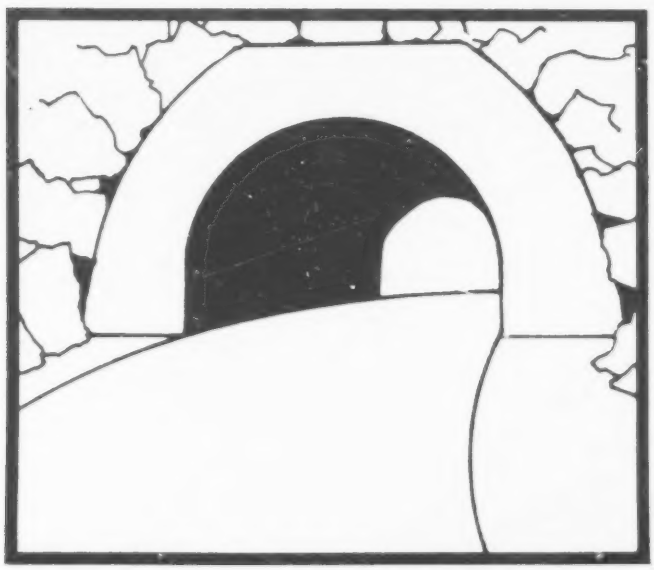


PRODUCED BY
UNITED STATES ARMY
ENGINEER SCHOOL
FORT BELVOIR, VIRGINIA 22060

STUDENT/SUPERVISOR INSTRUCTIONS, PRETEST/POSTTEST, AND ANSWER KEY ARE CONTAINED IN THIS BOOK.

REVISED
JUNE 1985

D101 6/2.

READ THE STUDENT/SUPERVISOR INSTRUCTIONS CAREFULLY. BE SURE YOU UNDERSTAND THEM COMPLETELY BEFORE BEGINNING THE LESSON. PLEASE DO NOT WRITE IN THIS BOOK.

The words "he," "his," and "men," when used in this publication, represent both the masculine and feminine genders, unless otherwise specifically stated.

STUDENT/SUPERVISORY INSTRUCTIONS

TYPE OF LESSON

- Tunnel Reconnaissance

AUDIENCE

- MOS 12B—Combat Engineer
- Skill Levels One and Two

TRAINING OBJECTIVES

Soldiers completing this lesson will be able to:

- Prepare a tunnel reconnaissance report, DA Form 1250.
- Prepare a tunnel recon symbol for a route recon overlay.

MATERIAL/EQUIPMENT/PERSONNEL REQUIRED

- Pencil and Paper
- DA Form 1250

TIME REQUIRED

- Individual: 60 minutes
- Group: 75 minutes

REFERENCES

- FM 5-34
- FM 5-36

STUDENT/SUPERVISORY INSTRUCTIONS

STUDENT INSTRUCTIONS

- Prerequisites: TEC Lesson 030-051-6354-A
- Take the Pretest/Posttest. If you pass, you do not have to take the lesson.
- Make sure you have the material, equipment, and personnel required to complete the lesson.
- Take the lesson.
- When you complete the lesson, take the Pretest/Posttest again. If you do not pass, take the lesson again.

SUPERVISOR INSTRUCTIONS

- Make sure students have completed the prerequisites listed in the Student Instructions.
- Administer the Pretest/Posttest to determine need for the lesson. If only one soldier is being tested, the test may be taken directly from the book, with response made on a separate sheet of paper. If more than one soldier is being tested, reproduce the test for direct use. To pass the test, a soldier must answer 100% of the items correctly.
- Make sure students have the material, equipment, and personnel required to complete the lesson.
- Administer the lesson to students who do not pass the Pretest/Posttest.
- Administer the Pretest/Posttest to students who complete the lesson. Those who do not pass must take the lesson again.

TEC LESSON 030-051-6355-A
Tunnel Reconnaissance
Part II

This test consists of two parts that cover every training objective of the lesson. The two parts have a total value of 100 points. When you have completed the test, check your answers against the Pretest/Posttest Answer Key. If you do not score at least 100 points, you must take the lesson—or take it again if you have already taken it. If you are taking the test directly from the instruction book, write your answers on a separate sheet of paper.

1. Using the following tunnel reconnaissance information, complete both sides of DA Form 1250, Tunnel Reconnaissance Report. You may use FM 5-34.

   On 11 Jul 78, (you) SSG W.L. Gibbs, from HHD 565th Engineer Bn., did a Tunnel Reconnaissance located on North/South Road between Sunnydale and South Union, Washington. This reconnaissance was ordered by the 565th Engineer Bn Commander. This reconnaissance is a portion of the route reconnaissance from coordinates EG 025848 to EG 073951. The map showing the area to be reconnoitered is from the map series V791, sheet 1477 IV, type 1:50,000 EG. The tunnel's south portal coordinate is EG 053885, and the north portal coordinate is EG 054887. The tunnel is located 2 km north of Sunnydale, Washington. The tunnel type is rock. The reconnaissance was to be completed and delivered to the S2 of the 565th Engineer Bn no later than 112000Z July 78. SSG Gibbs signed the completed report 111800Z July 78.

   The bore shape of the tunnel is square. The material that is tunneled through is limestone. The length of the tunnel is 250 meters, roadway width is 8 meters, the alignment is straight with 0% grade. The vertical clearance is 4.5 meters; horizontal clearance is 9 meters. The tunnel is lined with masonry and the portals are stone. It has natural ventilation, good drainage, and is in good condition. The year the tunnel was completed is unknown. The tunnel is not chambered for demolition. The tunnel has no lighting facilities, but the approaches are good and there are no in-tunnel restrictions. The by-pass for the tunnel is easy. Ten meters in front of each portal is an alternate crossing that runs parallel to the west side of the tunnel. The by-pass has good concealment on both sides.

2. Write a symbol for this tunnel on a separate sheet of paper.

INTRODUCTION

As squad leader of a tunnel reconnaissance, you are responsible for preparing DA Form 1250. Your supervisor uses this form to determine if the tunnel is an obstruction to the flow of traffic.

In this lesson you have two main steps:

① Prepare a Tunnel Reconnaissance Report, DA FORM 1250.

② Prepare a tunnel reconnaissance symbol for a Route Reconnaissance overlay.

① Preparing DA Form 1250, Tunnel Reconnaissance Report:

In this section you will learn to prepare the DA Form 1250, Tunnel Reconnaissance Report. The report consists of the following sections:

Front Sections: Items 1-29

HEADING
IDENTIFICATION
DIMENSIONS
SPECIFICATIONS
SPECIAL CONSIDERATIONS

Back Sections: Items 30-33

PLAN VIEW SKETCH
PROFILE VIEW SKETCH
PORTAL VIEW SKETCH
REMARKS

You are now ready to begin.

① Preparing DA Form 1250 (Cont.):

IDENTIFICATION

In this section you record geographic information which identifies the tunnel.

Transfer this information from notes you take during the reconnaissance and from maps.

Let's proceed. . .

① Preparing DA Form 1250 (Cont.):

1. ROUTE OR LINE		2. FROM (Initial Point)	3. TO (Terminal Point)	4. DATE/TIME (Of signature)
HIGHWAY 4	RAILROAD 5	6	7	8
5. MAP SERIES NR	6. SHEET NUMBER	7. GRID REFERENCE		8. TUNNEL NUMBER
9	10	TYPE	COORDINATES	
9. LOCATION FROM NEAREST TOWN				10. TYPE (Subaqueous, Rock, Soil)
DISTANCE	DIRECTION	NAME OF NEAREST TOWN		
11. NAME (Mountain or Water feature)				

Study these directions for preparing the IDENTIFICATION section:

4. Record the military or civilian highway route number. If the tunnel is not on a highway, write N/A.

5. Record any railroads. If there are none, write N/A.

6. Record grid coordinates where the route, road, or engineer reconnaissance begins.

7. Record grid coordinates where the route, road, or engineer reconnaissance ends.

8. Record the DATE and TIME you complete this report.

9. Record the map series number.

10. Record the map sheet number.

① Preparing DA Form 1250 (Cont.):

IDENTIFICATION (Cont.)

1. ROUTE OR LINE		2. FROM (Initial Point)	3. TO (Terminal Point)	4. DATE/TIME (Of signature)
HIGHWAY	RAILROAD			
5. MAP SERIES NR	6. SHEET NUMBER	7. GRID REFERENCE		8. TUNNEL NUMBER
		TYPE 11	COORDINATES 12	13
9. LOCATION FROM NEAREST TOWN				10. TYPE (Subaqueous, Rock, Soil)
DISTANCE 14	DIRECTION 15	NAME OF NEAREST TOWN 16		17
11. NAME (Mountain or Water feature) 18				

11. Record the scale of any maps you use.

12. Record either the beginning or ending grid coordinate where your tunnel is located. If one end is blocked, record the open end grid coordinate.

13. Assign and record an identifying number for each tunnel.

14. Record the distance of the tunnel to the nearest town.

15. Record the direction of the tunnel to the nearest town.

16. Record the name of the nearest town.

17. Record the material that the tunnel passes through.

18. Record what natural or manmade feature the tunnel goes through.

① Preparing DA Form 1250 (Cont.):

DIMENSIONS

In this section record all the dimensions you obtained during the reconnaissance.

You transfer these dimensions onto the form from your notes taken during the reconnaissance.

Turn the page and take a closer look at this section.

① Preparing DA Form 1250 (Cont.):

DIMENSIONS (Cont.):

			12. LENGTH	13. NUMBER OF TRACKS	14. ROADWAY WIDTH
			19	20	21
15. CLEARANCE		16. GRADE (Percent)	17. ALIGNMENT (Straight or radius of curve)		
VERTICAL 22	HORIZONTAL 23	24	25		

Study these directions for preparing the DIMENSIONS section:

19. Record the tunnel length.

20. Record the number of railroad tracks. If there are no tracks, write N/A.

21. Record the roadway width.

22. Record the vertical clearance in the tunnel.

23. Record the horizontal clearance in the tunnel.

24. Record the percent of slope in the tunnel.

25. Record the type of alignment.

① Preparing DA Form 1250 (Cont.):

SPECIFICATIONS

In this section you specify the type of lining and portal materials and the type of ventilation and drainage. You transfer this information from your reconnaissance notes onto this form.

Proceed. . .

① Preparing DA Form 1250 (Cont.):

SPECIFICATIONS (Cont.):

26. LINING (Material)	27. PORTALS (Material)	28. VENTILATION (Type)
26	27	28
29. DRAINAGE		
29		

Study the directions for preparing the SPECIFICATIONS section:

26. Record the type of lining material.

27. Record the type of portal material.

28. Record the type of ventilation.

29. Record the condition of the drainage system.

① Preparing DA Form 1250 (Cont.):

SPECIAL CONSIDERATIONS

In this section you describe the condition of the tunnel and the approaching routes.

Obtain this information from your reconnaissance notes.

① Preparing DA Form 1250 (Cont.):

SPECIAL CONSIDERATIONS (Cont.):

22. CHAMBERED FOR DEMOLITION	23. COMPLETED (Year)	24. CONDITION (Check appropriate box)
☐ YES 30 ☐ NO 31	32	☐ EXCELLENT ☐ GOOD ☐ FAIR ☐ POOR
25. BYPASSABILITY		
26. ALTERNATE CROSSING		
27. APPROACHES		
28. TUNNEL RESTRICTIONS		
29. GEOLOGIC DATA		

Study the directions for preparing the SPECIAL CONSIDERATIONS section:

30. Check whether or not the tunnel is chambered for demolition.

31. Record the date the tunnel was completed. If you do not have this information, write UNKNOWN.

32. Record the overall condition of the tunnel.

① Preparing DA Form 1250 (Cont.):

SPECIAL CONSIDERATIONS (Cont.)

18. LINING (Material)	19. PORTALS (Material)	20. VENTILATION (Type)

21. DRAINAGE

22. CHAMBERED FOR DEMOLITION ☐ YES ☐ NO	23. COMPLETED (Year)	24. CONDITION (Check appropriate box) ☐ EXCELLENT ☐ GOOD ☐ FAIR ☐ POOR

25. BYPASSABILITY
33

26. ALTERNATE CROSSING
34

27. APPROACHES
35

28. IN-TUNNEL RESTRICTIONS

29. GEOLOGIC DATA

33. Describe the condition of the bypassability as poor, good, or excellent. State limitations/obstacles in the bypass.

34. List any alternative crossings.

35. Describe the condition and gradient of the approach route.

① Preparing DA Form 1250 (Cont.):

SPECIAL CONSIDERATIONS (Cont.)

21. DRAINAGE		
22. CHAMBERED FOR DEMOLITION ☐ YES ☐ NO	23. COMPLETED (Year)	24. CONDITION (Check appropriate box) ☐ EXCELLENT ☐ GOOD ☐ FAIR ☐ POOR
25. BYPASSABILITY		
26. ALTERNATE CROSSING		
27. APPROACHES		
28. IN-TUNNEL RESTRICTIONS 36		
29. GEOLOGIC DATA 37		

36. List any in-tunnel restrictions.

37. Describe the soil and rock surrounding the tunnel making special notes of faults, rock falls, and springs.

PRACTICE EXERCISE:

Take out a blank DA FORM 1250. Using the following tunnel reconnaissance dimensions and data, along with FM 5-34, complete the HEADING and items 1-27.

> When you complete this practice exercise, keep your completed DA Form 1250 for the next practice exercise.

You are SGT James Mackey of A Company 12th Engr. Bn. On June 29th, 1978, you are directed by your company commander to perform a tunnel reconnaissance on the tunnel 10.0 km northwest of Ft. Belvoir, VA, on Highway VA 617. Shirley Highway is 16 km north of the tunnel. The coordinates are UT 098888 on map sheet number S 561 III, series V733, scale 1:50,000. The route recon extends from coordinates UT 122864 to UT 097899. This is the first of two tunnels you will recon.

The tunnel bore is square. The alignment is curved. The length of the tunnel is 100m with a centerline distance of 101.5m. The vertical clearance is 6.0m, the horizontal clearance is 8.0m, grade is 3%, and the alignment has a 35m radius. The tunnel is cut through the Accotink mountains. The approach road is curved, with a roadway width of 7.5 meters. The roadway width in the tunnel is also 7.5 meters. The lining and portals are concrete, ventilation is natural, and drainage is excellent. It is not chambered for demolition. Date of completion is unknown. Condition is good. Bypassability is easy. Alternate crossing is Backlick Road to Shirley Highway. Approaches to the tunnel are fair (4%) grade.

Demolitions have damaged the concrete lining of the tunnel 20m from the Fort Belvoir end of the tunnel. Concrete and rock debris are blocking one lane for a distance of 10 meters. Scattered debris is cluttering the roadway in the area.

The type of terrain is limestone. You are to complete the recon report by 1200 hours.

CHECK YOUR ANSWERS:

TUNNEL RECONNAISSANCE REPORT
For use of this form, see FM 5-36; the proponent agency is TRADOC.

DATE: 29 JUNE 1978

TO (Headquarters ordering reconnaissance): COMMANDING OFFICER

FROM (Name, grade and unit of reconnaissance officer): SGT JAMES MACKEY

1. ROUTE OR LINE — HIGHWAY: VA 617; RAILROAD: N/A
2. FROM (Initial Point): UT 122864
3. TO (Terminal Point): UT 097899
4. DATE/TIME (Of reconnaissance): [redacted]
5. MAP SERIES NO: V 733
6. SHEET NUMBER: 5561-III
7. GRID REFERENCE — TYPE: 1:50,000; COORDINATES: UT 09[redacted]
8. TUNNEL NUMBER: T-1
9. LOCATION FROM NEAREST TOWN — DISTANCE: 10.0 Km; DIRECTION: NORTHWEST; NAME OF NEAREST TOWN: FT BELVOIR, VIRGINIA
10. TYPE (Subsequent, Road, Rail): ROCK
11. NAME (Mountain or River Feature): ACCOTINK, MTS.
12. LENGTH: 100m
13. NUMBER OF TRACKS: N/A
14. ROADWAY WIDTH: 7.5m
15. CLEARANCE — VERTICAL: 6.0m; HORIZONTAL: 8.0m
16. GRADE (Percent): 3%
17. ALINEMENT (Straight or radius of curve): CURVED/35m RADIUS
18. LINING (Material): CONCRETE
19. PORTALS (Material): CONCRETE
20. VENTILATION (Type): NATURAL
21. DRAINAGE: EXCELLENT
22. CHARGED FOR DEMOLITION: ☐ YES ☑ NO
23. COMPLETED (Year): UNKNOWN
24. CONDITION (Check appropriate box): ☐ EXCELLENT ☑ GOOD ☐ FAIR ☐ POOR
25. BYPASSABILITY: EASY
26. ALTERNATE CROSSING: BACKLICK ROAD TO SHIRLEY HWY
27. APPROACHES: FAIR (4%)
28. IN-TUNNEL RESTRICTIONS: CONCRETE LINING OF TUNNEL HAS BEEN DAMAGED BY DEMOLITIONS 20 m FROM FORT BELVOIR END OF TUNNEL. CONCRETE & ROCK DEBRIS ARE BLOCKING ONE LANE FOR A DISTANCE OF 10 METERS SCATTERED DEBRIS CLUTTERS ROADWAY IN AREA.
29. GEOLOGIC DATA: LIMESTONE

DA FORM 1250

If you had difficulty with this exercise, review the last section of this lesson, and repeat this exercise.

If you had no problems, turn the page, and learn how to prepare Items 30-32, the back sections of DA FORM 1250.

① Preparing DA Form 1250 (Cont.):

SKETCHES

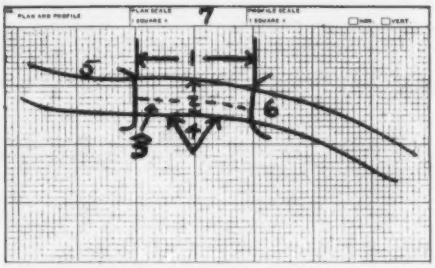
In this section draw the PLAN, PROFILE, and PORTAL views of the tunnel. On the sketches record the dimensions you obtain during tunnel reconnaissance.

Turn the page to learn more about the individual sketches.

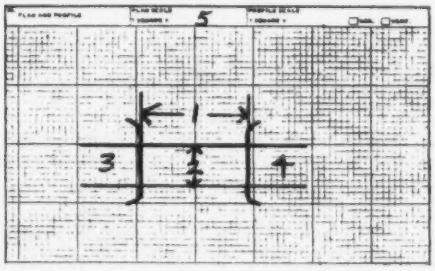
① Preparing DA Form 1250 (Cont.):

PLAN VIEW

(A)



(B)



The PLAN VIEW is an overhead sketch of the tunnel.

(A) If the alignment is ***curved,*** include these dimensions on your PLAN VIEW sketch:

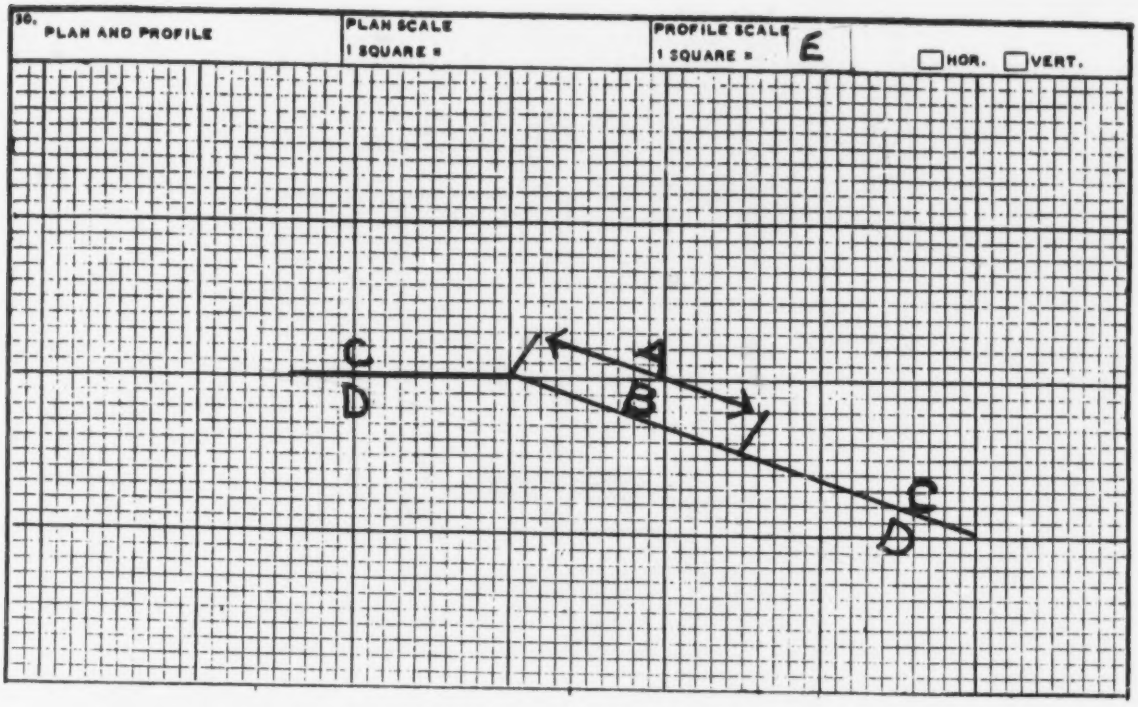
1. Tunnel length
2. Horizontal clearance
3. Centerline distance within the tunnel
4. Radius of curves within the tunnel
5. Route designation number
6. Width of approaching route
7. Scale. If you do not have one, write NONE.

(B) If the alignment is ***straight,*** include these dimensions on your PLAN VIEW sketch:

1. Tunnel length
2. Horizontal clearance
3. Route designation number
4. Width of approaching route
5. Scale. If you do not have one, write NONE.

① Preparing DA Form 1250 (Cont.):

PROFILE VIEW



The PROFILE VIEW is the side view of the tunnel. Study the dimensions to include in your PROFILE VIEW SKETCH:

A. Tunnel length

B. Percent of slope inside the tunnel

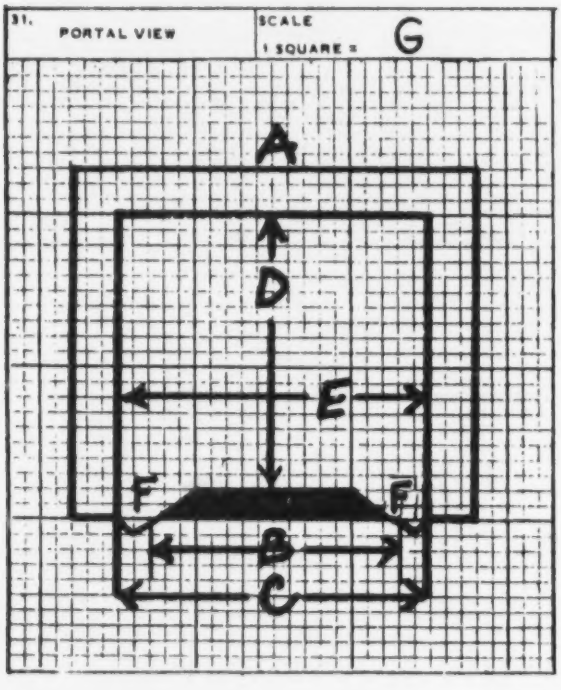
C. Distance to the nearest towns

D. Depict the slope of approaches and exits

E. Write NONE since you do not need an accurate scale for these sketches.

① Preparing DA Form 1250 (Cont.):

PORTAL VIEW



The PORTAL VIEW is a frontal view of the tunnel. Study the dimensions to include in your PORTAL VIEW SKETCH:

A. Shape of tunnel bore

B. Roadway width

C. Overall width

D. Vertical clearance

E. Horizontal clearance

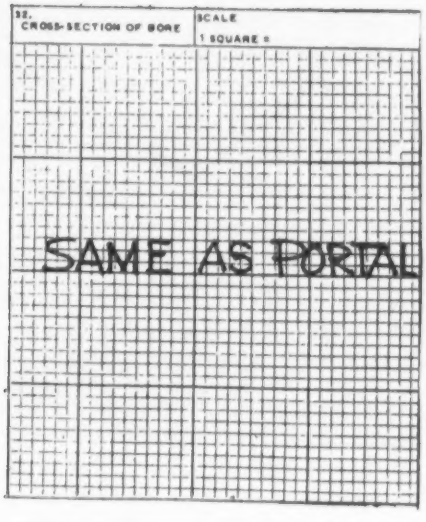
F. Drainage

G. Write NONE since you do not use a scale for these sketches.

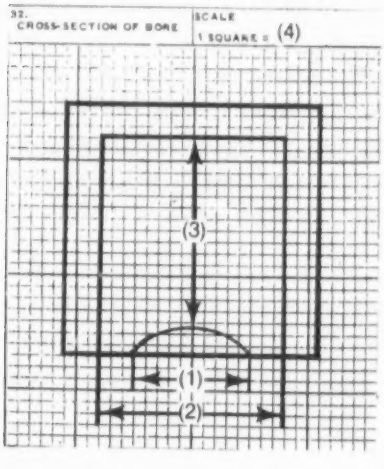
① Preparing DA Form 1250 (Cont.):

CROSS-SECTION VIEW

(A)



(B)

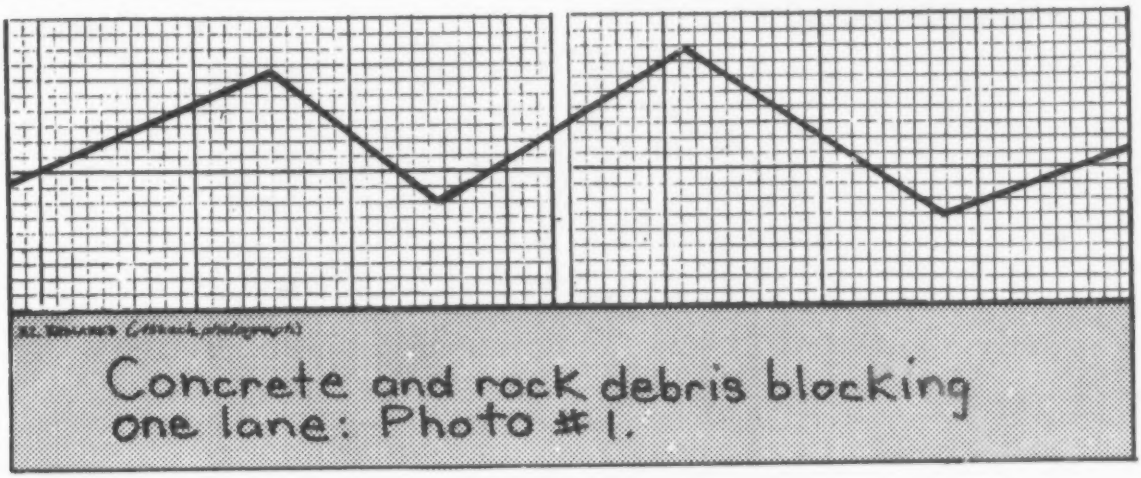


(A) If the tunnel bore is the same shape as the portal, do not prepare a CROSS-SECTION sketch. Write "SAME AS PORTAL" in this section.

(B) If the tunnel bore is not the same shape as the portal, draw a sketch of the bore including the following dimensions:

1. Roadway width
2. Overall width
3. Vertical distance
4. Scale

① Preparing DA Form 1250 (Cont.):



REMARKS:

In this section include any pertinent information you do not mention elsewhere in this report. Attach appropriate photographs if available. In the above example concrete and rock debris are blocking one lane in the tunnel.

PRACTICE EXERCISES:

Take out the DA Form you began in the last practice exercise. Given the following tunnel reconnaissance information, prepare items 30-33. You may refer to your FM 5-34 and the lesson at any time.

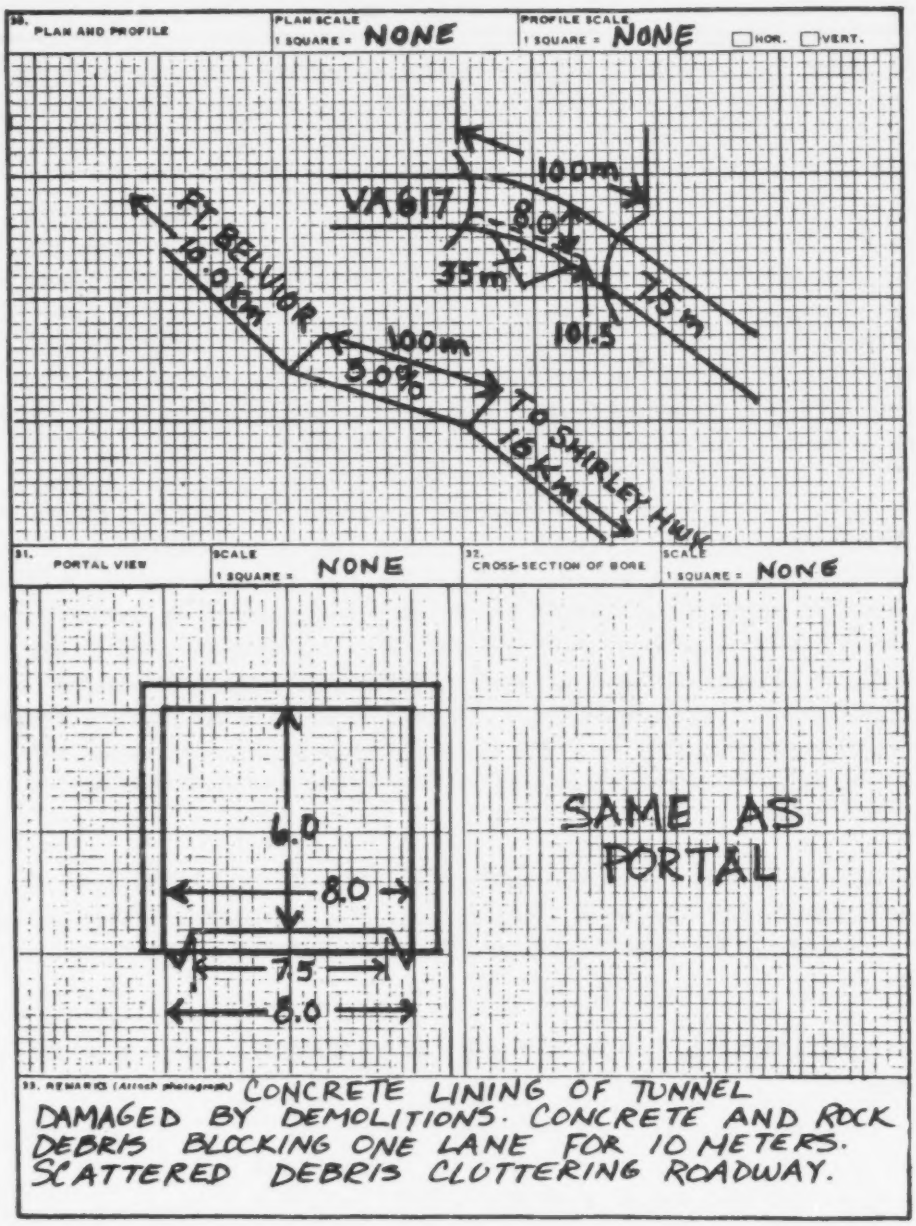
You are SGT James Mackay of A Company 12th Engr. Bn. On June 29th, 1978, you are directed by your company commander to perform a tunnel reconnaissance on the tunnel 10.0 km northwest of Ft. Belvoir, VA, on Highway VA 617. Shirley Highway is 16 km north of the tunnel. The coordinates are UT 098888 on map sheet number S 561 III, series V733, scale 1:50,000. The route recon extends from coordinates UT 122864 to UT 097899. This is the first of two tunnels you will recon.

The tunnel bore is square. The alignment is curved. The length of the tunnel is 100m with a centerline distance of 101.5m. The vertical clearance is 6.0m, the horizontal clearance is 8.0m, grade is 3%, and the alignment has a 35m radius. The tunnel is cut through the Accotink mountains. The approach road is curved, with a roadway width of 7.5 meters. The roadway width in the tunnel is also 7.5 meters. The lining and portals are concrete, ventilation is natural, and drainage is excellent. It is not chambered for demolition. Date of completion is unknown. Condition is good. Bypassability is easy. Alternate crossing is Backlick Road to Shirley Highway. Approaches to the tunnel are fair (4%) grade.

Demolitions have damaged the concrete lining of the tunnel 20m from the Fort Belvoir end of the tunnel. Concrete and rock debris are blocking one lane for a distance of 10 meters. Scattered debris is cluttering the roadway in the area.

The type of terrain is limestone. You are to complete the recon report by 1200 hours.

CHECK YOUR ANSWERS:



You have completed the first step of this lesson. When you are ready, proceed to Step Two.

(2) Preparing the Tunnel Reconnaissance Symbol for a Route Reconnaissance Overlay:

The tunnel reconnaissance symbol is a standard code containing all the important information about the tunnel. Your supervisor uses this symbol on his route overlay to determine critical information about the tunnel.

On the job you prepare the symbol on the route overlay. Turn it in to your supervisor with the completed DA Form 1250.

② Tunnel Reconnaissance Symbol (Cont.):

Match the letters in the formula above with the following descriptions. The numbers in the symbol represent tunnel measurements.

Ⓐ Draw a single arrow to record the geographic location of the tunnel entrance on the map overlay. For long tunnels draw 2 arrows to show both entrance and exit locations. The tunnel in this diagram is long so we've shown both entrance and exit locations.

Ⓑ Assign each tunnel a number for identification purposes. We assigned the tunnel in this diagram a number 1.

Ⓒ Record the ***length*** of the tunnel in meters. The tunnel in this diagram is 800 meters long.

Ⓓ Record the ***width*** of the traveled way in meters. If there are sidewalks, draw a slash after the traveled way width, and record the traveled way width including the sidewalks. The traveled way width in the above diagram is 15 meters, and the traveled way width including sidewalks is 17 meters.

Ⓔ Record the ***overhead clearance*** in meters. The overhead clearance in the above diagram is 5 meters.

Ⓕ Record the bypass possibilities using conventional reconnaissance symbols on the Overlay Symbols Table in FM 5-34. In the above diagram bypass possibilities are easy.

Turn the page and try some exercises.

PRACTICE EXERCISES:

Take out a blank sheet of paper. Using your FM 5-34 answer the following practice exercises.

1. Write A through G on your paper. Study the following diagram. Place the number next to the appropriate letter.

A. Location of tunnel entrance _____

B. Serial number _____

C. Length of tunnel _____

D. Width of traveled way _____

E. Bypass possibilities _____

F. Overhead clearance _____

G. Width of traveled way with sidewalks _____

2. When drawing a tunnel recon symbol for the map overlay, how do you indicate the entrances of a long tunnel? Draw the symbol.

Turn the page to check your answers.

CHECK YOUR ANSWERS:

1. A. Location of tunnel entrance 1

   B. Serial number 5

   C. Length of tunnel 6

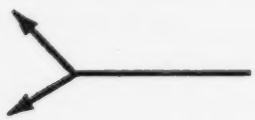
   D. Width of traveled way 4

   E. Bypass possibilities 2

   F. Overhead clearance 3

   G. Width of traveled way with sidewalks 7

2. With split arrows



When you are ready, turn the page for more practice.

PRACTICE EXERCISES: (Cont.)

Draw a tunnel reconnaissance symbol showing the following information:

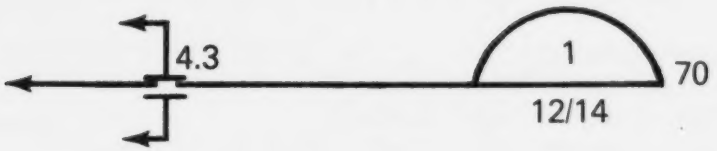
3. Tunnel Number: 1
   Overhead clearance: 4.3 meters
   Width of traveled way: 12 meters
   Width of traveled way including sidewalks: 14 meters
   Length: 70 meters
   No bypass available

4. Tunnel Number: 2
   Overhead clearance: 6.2 meteres
   Traveled way: 15 meters
   Length: 800 meters
   Difficult bypass available

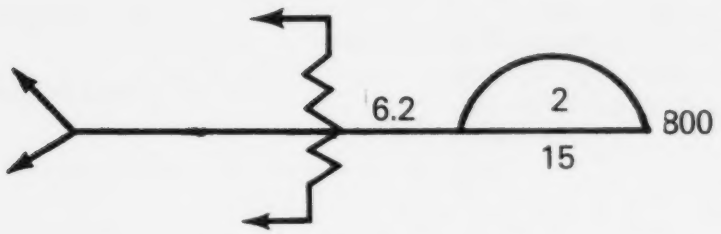
Turn the page and check your answers.

CHECK YOUR ANSWERS:

3.



4.



You have now completed Step 2 and this lesson. At this time review any sections you are unsure of.

When you're ready, ask for the lesson test. Good luck!

INTENTIONALLY
BLANK

PRETEST/POSTTEST ANSWER KEY

All parts must be completed as shown to achieve a passing score of 100 points.

1. Completed DA Form 1250 (Front and Back)

TUNNEL RECONNAISSANCE REPORT

DATE: 11 July 78

FROM (Name, grade and unit or organization office): SSG W.L. Gibbs, HHD, 565th Engr. Bn.

TO (Command Post): CMR, 565th ENGR BN, ATTN: S2

4. DATE-TIME FOR OPERATIONS: 111800Z Jul78

1. ROUTE OR LINE: MEMORAY NONE See Item 33

2. PRIOR (Control Point): EG 025848

3. TO (Command Post): EG 073951

5. MAP SERIES NO: V791

6. SHEET NUMBER: 1477 IV

7. GRID REFERENCE: TYPE EG; COMPUTED FROM MAP EG053867 OR EG053867

8. TUNNEL NUMBER: 1

9. LOCATION FROM NEAREST TOWN: DISTANCE 2 km; DIRECTION North; NAME OF NEARBY TOWN Sunnydale, Washington Rock

10. TYPE (Subterranean, Road, Rail): N/A or ?

11. NAME (Mountain or Pass if tunnel): N/A

12. LENGTH: 250 meters

13. NUMBER OF TRACKS: N/A

14. ROADWAY WIDTH: 8 meters

15. CLEARANCE: VERTICAL 4.5 m; HORIZONTAL 9 m

16. GRADE (Percent): 0%

17. ALIGNMENT (Straight or radius of curve): straight

18. LINING (Material): Masonry

19. PORTALS (Material): stone

20. VENTILATION (Type): Natural

21. DRAINAGE: Good

22. CHAMBERED FOR DEMOLITION: ☐ YES ☒ NO

23. COMPLETED (Yes or No): ?

24. CONDITION (Check appropriate box): ☐ EXCELLENT ☒ GOOD ☐ FAIR ☐ POOR

25. BYPASSABILITY: EASY

26. ALTERNATE CROSSING: 10 meters in front of each portal running parallel and west of the tunnel.

27. APPROACHES: GOOD

28. NO. TUNNEL RESTRICTIONS: NONE

29. REMARKS: LIMESTONE

DA FORM 1250

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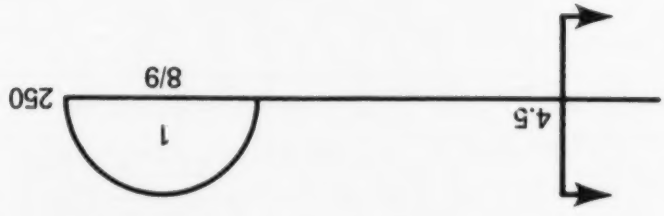
2. Written symbol for this tunnel



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